

CLAIMS

What is claimed is:

1. In a pilot poppet type pressure control valve which includes a main poppet which has a boundary between a high pressure chamber and a back pressure chamber, is elastically supported by a second elastic member, reciprocates based on an interrelationship between a pressure of the back pressure chamber with respect to the pressure of the high pressure chamber and an elastic force of a second elastic member for thereby opening and closing a discharging flow path of the high pressure chamber, and a pilot poppet which is elastically supported by at the first elastic member in the discharging port of the back pressure chamber, reciprocates based on an interrelationship between a pressure of the back pressure chamber and an elastic force of the first elastic member and opens and closes the discharging port of the back pressure chamber wherein the pilot poppet seals the discharging port of the back pressure chamber by a supporting force of the first elastic member when the pressure of the high pressure chamber is below a set pressure level, and the discharging flow path of the high pressure chamber is closed by the main poppet to which the back pressure of the back pressure chamber is applied, and the pilot poppet opens the discharging flow path of the high pressure chamber to the main poppet to which the pressure of the high pressure chamber is applied as the pilot poppet opens the discharging port by the pressure of the high pressure chamber when the pressure of the high pressure chamber exceeds a set pressure level, an improved pilot poppet type pressure control valve in which the discharging port of the back pressure chamber which is opened and closed by the pilot poppet has an inner diameter which is gradually increased in the downstream direction for preventing an instant pressure decrease of the fluid which is discharged.

2. The valve of claim 1, wherein an inner surface of the discharging port of the back pressure chamber has a circular longitudinal section structure.

3. The valve of claim 1, wherein said pilot poppet is closely contacted with an inner surface of the discharging port for thereby sealing the discharging port as a sealing portion having an outer surface which has an outer diameter gradually increased.

4. The valve of claim 1, further comprising a piston which reciprocates in the main poppet in a forward and backward direction, is elastically supported by a second elastic member together with the main poppet and opens the pilot poppet when the piston is backwardly moved by a pressure of the high pressure chamber.

5. The valve of claim 4, wherein said piston includes an orifice formed in the interior of the piston for guiding a fluid of the high pressure chamber to the back pressure chamber.